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Booms and Busts Episodes and the Choice of Adjustment Strategy

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Abstract

Numerous industrialised and emerging market countries have experienced boom-bust episodes in asset prices in the past 20 years. This study looks at stylised facts and conducts statistical analysis for such episodes, distinguishing between countries that pursued an external adjustment strategy (and experienced a real effective exchange rate depreciation during busts) and those that relied on an internal adjustment process (and experienced no depreciation).

The study finds that different adjustment experiences are correlated with the degree of macroeconomic imbalances and balance sheet problems. Internal adjustment seems more prevalent when financial vulnerabilities, excess demand and competitiveness loss remain relatively contained in the boom. In the bust, internal adjusters experience more protracted but less deep downturns than external adjusters as imbalances unwind more slowly.

Some Central and Eastern European EU Member States have started showing signs of a boom. Against this background the experience of other countries may serve as an “early warning” and may raise awareness of related policy challenges.

Key words: Booms and busts, financial crisis, external and internal adjustment, competitiveness

JEL codes: E32, E63, E65

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1. Introduction

What have been the experiences with boom-bust episodes that have affected numerous industrialised and emerging market countries over the past 20 years? How has this experience been influenced by the exchange rate adjustment strategy?

These are the first questions that this study tries to answer by deriving stylised facts on a number of boom-bust episodes. Many of these episodes have already been studied extensively on a country basis or from a regional perspective. But this study takes a more comprehensive, global view and looks at experiences and patterns across different country groups including industrialised countries, emerging markets and a number of Central and Eastern European EU Member States.

Moreover, the study analyses different adjustment strategies in the face of busts. It differentiates between those countries that experienced a (CPI-based) real effective exchange rate depreciation/devaluation during the bust, which we call “external adjusters”, and those that did not experience a devaluation, which we call “internal adjusters”.

The study looks at the interaction of real and financial sector variables in boom-bust episodes where asset price cycles and their impact on private balance sheets constitute an important driving force. Volatility can be reinforced (or moderated) through domestic macroeconomic factors, competitiveness developments and the international financial environment. We first derive stylised facts for different country groups by examining a number of relevant flow and stock variables. In addition, we conduct statistical analyses as regards the incidence and patterns of boom and bust episodes and their impact on the exchange rate strategy.

The study finds that boom bust patterns are rather similar across industrialised and emerging countries. The former countries are perhaps less vulnerable but not immune to systemic risk with reversing international capital flows and busts turning into financial crises. Most importantly, we find that countries’ different (exchange rate) adjustment experiences are correlated with the extent of macroeconomic imbalances and balance sheet deterioration.

- External adjusters tend to experience more pronounced booms with more overheating of demand, increases in prices and credit, loss of competitiveness and deterioration of (private, public and external) balance sheets than reported for internal adjusters.
- In busts, external adjusters tend to experience deep downturns and rapid recoveries as imbalances are initially more severe but, subsequently, also unwind more quickly. Internal adjusters tend to face less deep but more protracted downturns (and even deflation) as imbalances unwind more slowly and adjustment via the trade and credit channels takes more time.

What is the current situation of the Central and Eastern European EU Member States? The analysis of these countries suggests that there are a few new CEE

Member States that appear to be in the early stages of a boom while there are some others that appear to be further along. But clear and definite conclusions can not be drawn as yet, not least due to serious data problems. The experiences of boom-bust scenarios in other countries may nevertheless serve as an “early warning” and may raise awareness of related policy challenges.²

The study has a number of shortcomings. The choice to discuss stylised facts for a large number of diverse countries comes at the expense of a more detailed analysis for the individual countries or regions. Furthermore, we do not analyse whether countries “chose” a certain adjustment strategy or whether markets “forced” them to do so (or a mixture of the two).³ We are mainly interested in detecting patterns of cross-country experiences with booms and busts as depending on the different exchange rate adjustment experience. Moreover, we focus on the interaction of various transmission channels and different country groups but not on institutional and micro-structural issues.

The study is organized as follows. The next section discusses conceptual issues, including the discussion of exchange rate adjustment experiences, the relevant sectoral variables and transmission channels and the methodology for identifying boom-bust cycles. Section three discusses experiences across different country groups. Section 3.1 reports the experience of ten industrialised countries with boom-bust phases in the 1980s-1990s. Section 3.2 turns to a small sample of emerging Asian market countries before section 3.3 examines the recent experiences of Portugal and the Netherlands. Section 4 takes stock of the situation in CEE EU Member States and looks at boom probabilities for these countries. Section 5 concludes.

2. Conceptual Issues

2.1 Transmission Channels

Boom-bust episodes are empirical phenomena. There is not just one and only one theoretical framework that defines them and explains their emergence and evolution. There are different theoretical approaches and measurement tools. Nevertheless, there is a considerable literature that looks at boom bust episodes primarily as a result of asset price “cycles” that propagate into the real economy via

² In addition, with respect to the CEE EU Member States it would be interesting to look at boom episodes that did not end in a bust period. Including such episodes and comparing them in a systematic way with the current situation in the CEE EU Member States is, however, beyond the scope of this paper.

³ The “choice” of adjustment strategy is to some extent “endogenous” to the extent of prevailing imbalances as larger imbalances *ceteris paribus* make internal adjustment more difficult/costly.

the credit transmission channel (Bernanke, Gertler and Gilchrist, 1999; Bordo and Jeanne, 2002; Borio, 2005).⁴ This channel also forms our conceptual basis for identifying boom-bust episodes. However, there are also three other propagation mechanisms or transmission channels which play a role in the evolution of booms and busts and which warrant a brief discussion: ii) the trade channel, iii) the international financial channel, and iv) the fiscal channel.

As regards the first channel, the financial accelerator literature explains the emergence of boom-bust phenomena in the real and financial economy via asset supply rigidities and the *credit transmission channel*. When asset prices rise, the collateral value of the assets increases which, in turn, stokes credit supply and demand. This in conjunction with wealth effects provokes further real demand, output and asset price rises. Asset supply increases and growth of debt cause this process to reverse at some point (putting pressure on prices and net worth), and the opposite, mutually reinforcing dynamics fuel the downturn of asset prices and the real economy.

The second channel worth referring to in this context is the *trade channel*. In a period of strong growth, a country may lose competitiveness via rising unit labour costs. This initially further boosts domestic demand and imports but it undermines the tradable goods sector and export growth. Over time the weakening effect from exports and the trade-competing sector start to dominate, employment is falling, so that growth weakens. In the downturn and especially if a devaluation of the exchange rate takes place, relative price adjustments result in the revival of import-competing industries which together with rising exports helps the economy to emerge from the downturn. If the exchange rate is not devalued, the full adjustment has to come through a reversal of unit labour costs and relative prices between tradables/non-tradables before the revival of exports and import-competing industries can set in.

The third channel is the *international financial channel*. Capital inflows in the boom/high growth period keep the exchange rate appreciated and imports cheap. Sudden stops of inflows and net capital outflows can exacerbate (if not trigger) the asset price bust and downturn of the real economy by choking domestic demand, increasing pressure on the exchange rate and on the banking system (see Calvo, Izquierdo and Mejia, 2004; Calvo, Izquierdo and Talvi, 2003 or Eichengreen and Choudhry, 2005).

Much attention has been drawn to international capital flows exacerbating booms. They can give rise to significant short term and foreign-currency denominated debt, coupled with insufficient reserves. If then the boom turns to

⁴ A somewhat different approach where frictions from adjustment costs to investment and monopolistic competition in the non-trade goods sector can generate boom bust phenomena in dynamics general equilibrium modelling is applied by Fagan and Gaspar (2005).

bust, a reversal of capital flows may make the exchange rate untenable which, in turn, exacerbates the effect of asset price declines on collateral value and non-performing loans and may even push the economy from “bust” into a “full-fledged” crisis. By contrast, the opposite case of countries experiencing capital inflows and pressure on their exchange rate to appreciate during bust phases has received much less attention. We will see below that this has been the experience of a number of countries whose currencies are considered safe havens including Switzerland and Japan. In these instances, relative prices in the tradable-non-tradable goods sectors in the bust have to adjust internally even more strongly.

The role of public finances (or the *fiscal channel*) is little discussed in the boom-bust literature. Jaeger and Schuknecht (2004) point to revenue windfalls during booms that derive from asset-based taxes and from indirect tax revenue that is boosted by wealth effects on domestic demand. These windfalls can be very significant. They can create incentives of pro-cyclical policies in the boom if such windfalls are not recognized as such and spent. Fiscal policies can also be (forced to become) pro-cyclical in the downturn if the fiscal position at the beginning of the bust is weak and adjustment is needed to prevent destabilizing deficit increases. Jaeger and Schuknecht find significant evidence for such pro-cyclical policies in a study of industrialised country boom-bust episodes since the 1970s.

Fiscal policies can also exacerbate boom-bust experiences via indirect effects through other channels. The financing needs arising from large fiscal deficits can increase vulnerability via the international financial channel if such deficits raise the current account deficit and hence the vulnerability to “sudden stops”. Fiscal policies can worsen imbalances via the competitiveness/trade and domestic financial channels if public wage and employment increases put pressure on unit labour costs and if these, in turn, stoke credit and asset price booms.

The previous references to interlinkages between the sectoral channels, already point to the fact that vulnerabilities and risks need to be assessed from an inter-sectoral perspective. Or in other words, we need to look at *systemic risks* and not just at sectoral ones. The literature has started to acknowledge the importance of analysing intersectoral linkages, especially via balance sheet vulnerability (Allen, Rosenberg, Keller, Setser and Roubini (2002). Boom-bust phenomena that in some cases culminate in financial/BOP crises are intellectually interesting because of these very complexities. Moreover, they are economically relevant because of the significant adjustment needs and the large output and fiscal costs that can arise in protracted busts or deep crises (Watson, 2005; Honohan and Klingebiel, 2003; Bordo and Jeanne, 2002; Calvo et al.).

2.2 Identification of Booms and Busts

But when is there a boom and bust? There is by now a considerable literature that develops methodologies of identifying such phenomena. These include Bordo and

Jeanne (2002), Jaeger and Schuknecht (2004), or Detken and Smets (2004) for defining boom and bust episodes in industrialized countries. For emerging markets we proxy bust with financial crises as listed by Honahan and Klingebiel (2003) which include overt systemic financial crises and cases of financial distress where the net worth of the banking system is negative.

In this study, we look at (i) boom-bust episodes in industrialised countries since the mid 1980s as identified in Jaeger and Schuknecht, 2004 and defined as phases of major and persistent upswings or downturns in asset price indices as derived by Borio, Kennedy and Prowse (1994),⁵ (ii) a number of Asian emerging market financial crises in the 1990s (as identified by Caprio and Klingebiel, 2003), where anecdotal evidence suggests that crises were preceded by asset price booms and (iii) the situation of the CEE EU Member States, where in some cases strong growth is also coupled with anecdotal evidence of very significant asset price increases.

2.3 Internal versus External Adjustment

When countries need to adjust in an environment turning from boom to bust as discussed above, they can either adjust through the exchange rate or the domestic price level or a combination of both. In this study we refer to *external adjusters* as those countries that allowed the nominal exchange rate to depreciate and (due to inflation differentials with trading partners being smaller than the devaluation) also experienced a depreciation of the real effective exchange rate. *Internal adjusters* are those countries that did not allow a depreciation or that experienced an appreciation of their real exchange rate through the depreciation of their trading partners. These countries had to correct real wage or tradable/non tradable sector imbalances via domestic price adjustments while external adjusters primarily (though not necessarily exclusively) addressed imbalances through the exchange rate change.

⁵ Jaeger and Schuknecht (2004) construct boom and bust phases in real asset prices by following a dating method initially proposed by Harding and Pagan (2002), based on the so-called triangular methodology. This technique identifies the peaks and troughs of the asset price series (their turning points) whereby asset price indicators include stocks and real estate depending on their weight in the asset composition of an economy. They then calculate the duration of the period from trough to peak (the upswing) and from peak to trough (the downturn) and the amplitude of the asset price changes over these periods. By multiplying duration and amplitude, they arrive at a ranking of asset price upswings and downturns of which the largest quintile is referred to as boom-bust episodes. This enables them to separate booms and busts in asset prices from more normal asset price movements. The approach does not entail that a boom or a bust phase needs to be followed by another similar phase. The only exception in this list is Portugal where no comparable asset price indicator is available.

We measure exchange rate developments via the real effective exchange rate that adjusts nominal exchange rate changes for CPI differentials for the weighted average of trading partners. This is a more appropriate measure than unit labour cost-based measures which already include wage-based internal adjustment.

2.4 Country and Variable Choice and “Road Map” for Discussion

Table 1 presents the countries we examine, the periods of booms and busts and the respective adjustment experience of each country. We apply a so-called case study approach. For all countries the first year of the bust (or the first year of financial crisis) are set as t_1 . Previous years cover the boom period and are counted backward. Following years cover the bust and financial crisis/post crisis period respectively. We normally look at 12 year windows from $t-6$ to t_5 (unless t_1 is so recent that data until t_5 is not yet available). We also conduct Wilcoxon/Mann-Whitney tests to see whether differences in the means and variances of external and internal adjusters are “significant”.

In order to derive stylised facts for the case studies we look at a number of stock and flow variables that are most representative of the economic sectors and transmission channels discussed above. As shown in table 2, these include (i) output and demand related variables, (ii) credit and asset price variables and private sector debt (domestic financial channel), (iii) real effective exchange rate, unit labour costs and export/GDP (trade/competitiveness channel), (iv) the current account and external financing patterns and external debt (international financial channel) and (v) public deficits and debt (fiscal channel). As will be seen, this matrix of variables can in reality not be discussed fully homogeneously as there are significant data gaps. But it provides a road map linking the conceptual framework with stylised facts discussed below.

As we put particular emphasis on exchange rate developments and the adjustment strategy, we will first distinguish external and internal adjusters according to their real effective exchange rate developments. The subsequent discussion starts from the presumption of a certain sequencing in boom-bust episodes that also suggests a certain order of the sectoral discussion. Initially domestic financial and real variables seem to interact and produce a boom. We start with the discussion of real sector variables before proceeding to asset prices and domestic financial developments.⁶

⁶ The reverse order is also conceivable (see e.g. Jonung, Schuknecht and Tujula, 2005) given that this is something of a “chicken and egg problem”. However, the more “conventional” ordering approach chosen in this study appeared to be a bit more reader-friendly.

Table 1: Sample Countries and Relevant Dates/Episodes

Country	Boom	Bust
I. Industrialised countries, mid 1980s – early 1990s		
“External adjusters”		
Australia	1984-89	1990-95
Canada	1985-89	1990-95
Finland	1986-89	1990-93
Italy		1991-97
Spain	1985-90	1991-95
Sweden	1986-89	1990-93
United Kingdom	1983-89	1990-94
“Internal adjusters”		
France	1986-90	1991-96
Japan	1979-90	1991-02
Switzerland	1983-89	1990-96
II. Asian emerging economies, late 1990s		
	Bust= start of Asian Crisis	
Hong Kong (“internal adjuster”)	1997	
“External adjusters”		
Korea	1997	
Thailand	1997	
Malaysia	1997	
III. Industrialised countries, late 1990s – today		
(“internal adjusters”)		
Netherlands	1993-2000	
Portugal	1996-2000	
IV. Central and Eastern European EU Member States		
	Observation period	
Bulgaria	All 1999-2006	
Czech Republic		
Estonia		
Hungary		
Latvia		
Lithuania		
Poland		
Romania		
Slovakia		

Table 2: Key Variables to Analyse Transmission Channels

	Real (demand and supply)	Domestic financial	Trade/external competitiveness	International financial	Fiscal
Flow variables	Δ output/ consumption/ investment	Δ credit Δ asset prices	Δ real effective exchange rate/ unit labour costs/ exports/current account	External financing via FDI, portfolio and other inv.	Deficit
Stock variables	Cumulative changes	Household & corporate debt	Cumulative changes	Cumulative changes	Public debt

The trade and competitiveness channel tends to contribute to ending the boom and is therefore discussed next. The international financial channel can already exacerbate the boom but since its greatest relevance is for emerging markets (e.g. sudden stops) it is discussed fourth. Although public finances can exacerbate or moderate boom-bust episodes, the government often picks up the tap (as losses are socialized) and, hence, this channel is discussed last.

3. Analysing Past Boom-Bust Episodes in Industrialised and Emerging Economies

3.1 Boom-Bust Episodes in Industrialized Countries in the 1980s and 1990s

This section will look at case studies and stylised facts for 10 industrialised country which experienced (asset price) boom-bust episodes in the late 1980s and 1990s.⁷ As we are particularly interested in the external environment and exchange rate policies, we will present stylised facts for 1) the seven countries that experienced a depreciation of their real effective exchange rate in the bust. They include the UK, Sweden, Finland, Australia, Canada, Italy and Spain. These external adjusters are mostly countries that had relatively fixed exchange rates in the boom but floated/devalued their currencies early in the bust. 2) The three countries that experienced an appreciation in the real effective exchange rate (CPI-based) in the bust. This group includes Japan, Switzerland and France (called internal adjusters). Two of the internal adjusters had floating currencies throughout the boom and bust

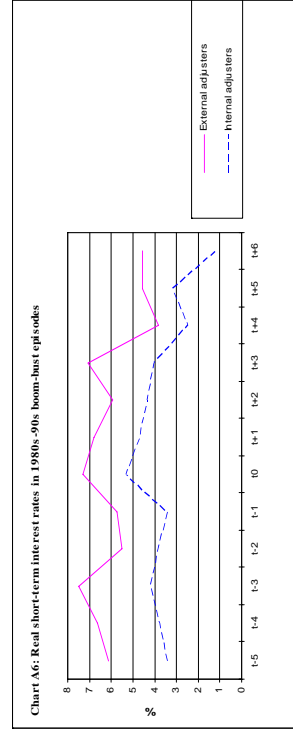
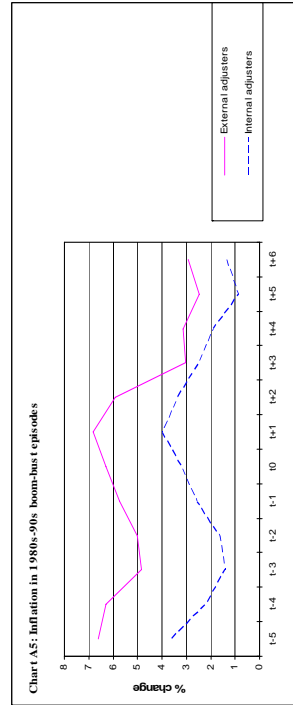
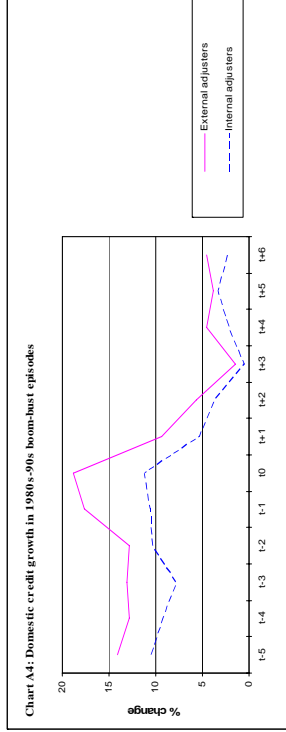
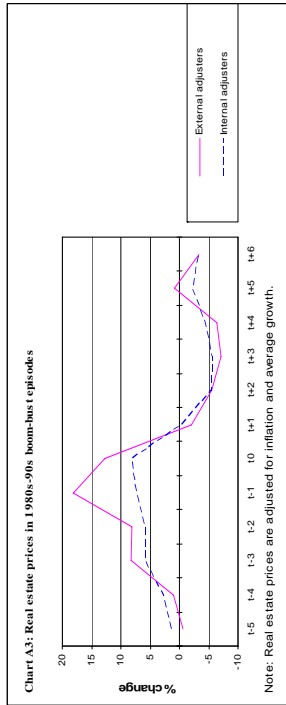
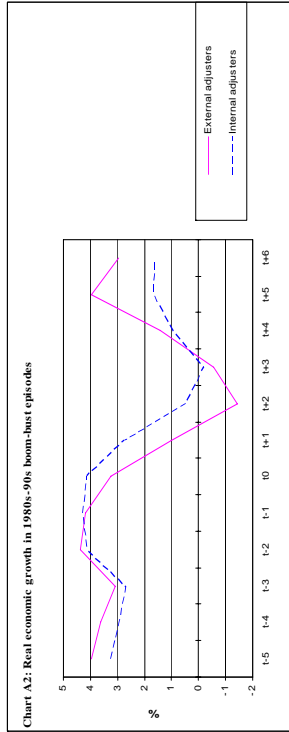
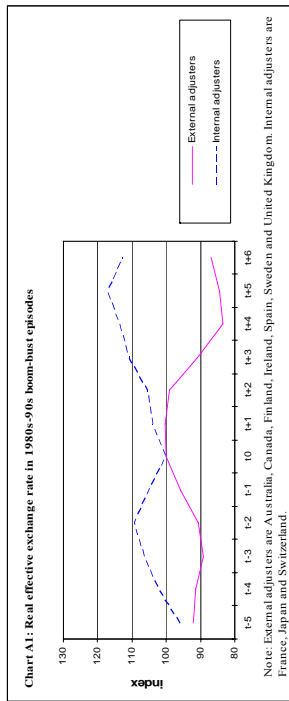
⁷ For earlier studies, applying a stylised facts approach on these phenomena see also Jaeger and Schuknecht (2004), Jonung, Schuknecht and Tujula (2005), and IMF (2000).

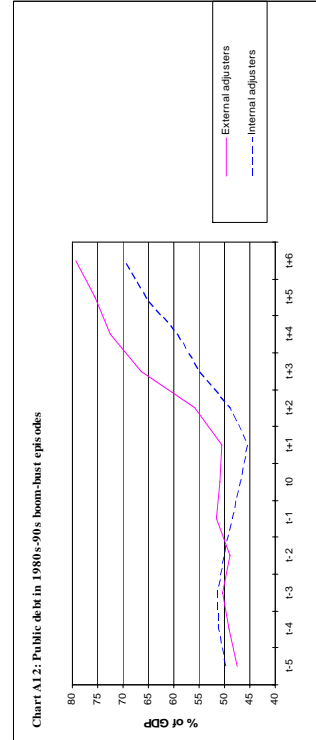
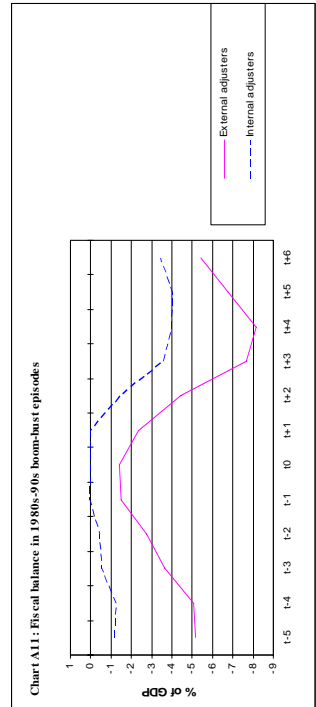
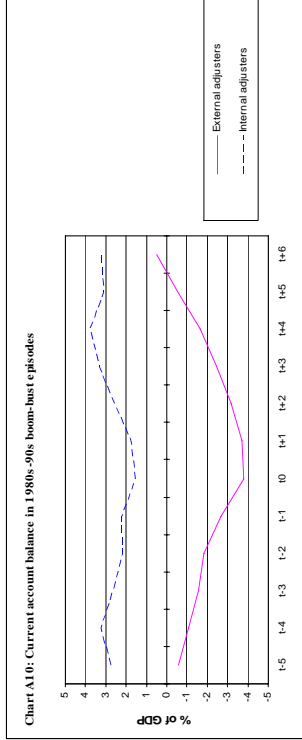
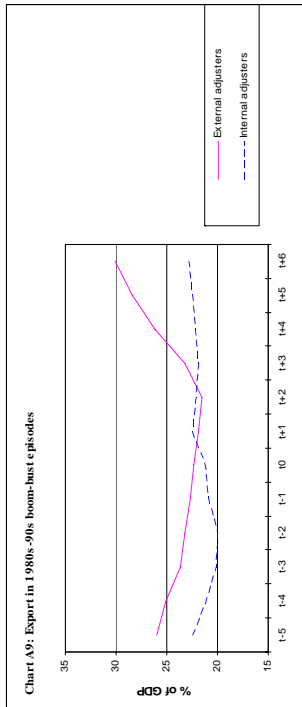
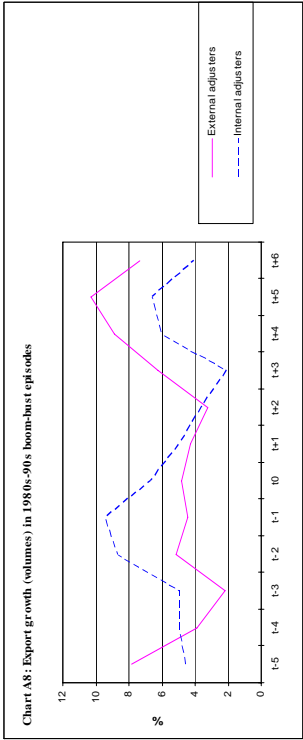
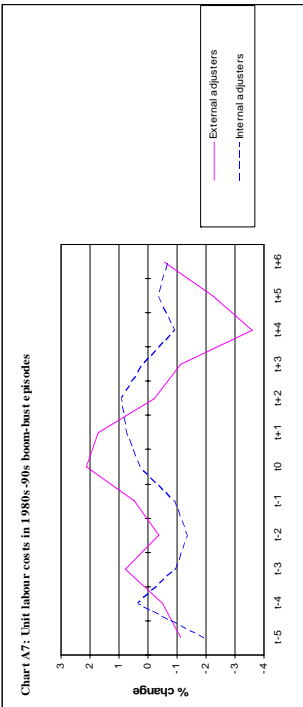
(Japan and Switzerland). France maintained its peg to the German Mark (while widening the band) so that it experienced a relative appreciation as its main trading partners devalued.

To prepare the discussion of stylised facts across economic sectors from the angle proposed above, we look at *exchange rate developments* in the sample countries. Chart A1 shows that over the boom period, the ten countries experienced a (CPI-based) real effective exchange rate appreciation (REER) by roughly 10% on average. This appreciation was more pronounced in the group of external adjusters, especially towards the end of the boom. Most interesting is the pattern during the bust: external adjusters show a strong depreciation in the REER as of the second/third year of the bust (when most sample countries actively devalued or floated their currencies). A continued, gradual appreciation was experienced by the internal adjusters.

As regards the *real economic environment*, Chart A2 shows the relatively strong growth performance in the boom of the late 1980s (t-5 to t0): three to four percent real growth. In the bust (t1-t6), growth not only fell rapidly but significant divergences across the two countries groups emerged. Amongst external adjusters growth fell very rapidly. Growth on average was negative by t2. This was followed by a sharp rebound in t3-t4. Internal adjusters experienced a more gradual slowdown to near zero growth in t2 and t3. But the subsequent recovery was also much more gradual: average growth only recovered to 1-2% by the end of the observation period. In more concrete terms, it reflects the experience of six years of very low growth in France and Switzerland and the very persistent weak growth performance of Japan.

Chart 1: Boom-Bust Episodes in Industrialized Countries in the 1980s and 1990s





Turning to demand composition, all countries experienced a strong consumption and investment boom where average growth rates exceeded output growth (hence contributing to growing external imbalances). In the bust, the picture reversed with the result that cumulative positive departures from trend consumption and investment were balanced out or even overshoot in the other direction in the bust.⁸ Consumption and investment declines were even steeper in the group of external adjusters, in line with the picture for real output growth.

Turning to the *domestic financial environment*, Chart A3 illustrates the significant real estate price cycle that was experienced over the boom and bust phase across all countries. Note that price increases during the boom were somewhat more extreme for external as compared to internal adjusters. The real estate price cycle coincided with a distinct credit cycle where credit growth accelerated gradually until the end of the boom phase and decelerated sharply thereafter (Chart A4). The credit cycle was also more pronounced for the external adjusters.

The credit and real estate boom led to a considerable build up of private sector debt in the boom that was (at least partly) reversed in the bust. However, good quality data for that period is only available for very few countries. Household and corporate debt ratios increased on average by 50% during the boom. This increase was largest in Japan (from 140% of GDP in 1980 to about 210% of GDP in 1991). On the whole, this picture is consistent with the view that the asset price cycle in conjunction with the credit channel contributed to the emergence and evolution of boom-bust phases.

Inflation developments are also interesting and point to important problems in the policy mix for external adjusters (Chart A5). On the whole, inflation picked up rather gradually over the boom before declining in the downturn. But as regards the two country groups, external adjusters on average experienced significantly higher inflation than internal adjusters in the boom. While inflation differentials were relatively moderate on a year-to-year basis (inflation peaked in t1 at 7% for the average of external adjusters versus 4% for internal adjusters) the differential accumulated over the years is nevertheless very significant. In the bust, external adjusters experienced continued inflation pressures partly as a result of significant exchange rate devaluations.

The different inflation performance in conjunction with the credit channel could be an explanation for the hammock-shaped pattern of protracted low growth experienced by internal adjusters during the bust that contrasts with the V-shaped pattern experienced by external adjusters. The high inflation rate of the external adjusters facilitated a rapid price adjustment in real estate markets without much of

⁸ Jaeger and Schuknecht (2004) found that the average cumulative deviation from trend in booms and busts amounted to about 10% for consumption and about one quarter for investment.

a nominal price fall (given that real estate prices tend to be nominally sticky). Low inflation countries, by contrast, experienced a much more protracted housing market adjustment. The adverse effects of drawn-out house price adjustments via collateral effects on credit markets were, therefore, probably less pronounced but more persistent than in high inflation countries.

Interest rate policies at the time of the boom reflect the fact that external adjusters' monetary policies were geared at exchange rate targeting where high capital inflows kept interest rates less counter-cyclical than the strong demand (and asset price) boom might have otherwise suggested. Initially, interest rates also stayed high during the bust, first to defend the exchange rate and subsequently to fight inflationary pressures (Chart A6). Internal adjusters pursued somewhat more counter-cyclical policies and real interest rates rose more strongly in the boom while coming down gradually in the bust.

Turning to *competitiveness and the trade channel*, we find a strong divergence in competitiveness and trade developments over time and across country groups. We start with unit labour costs (ULC) which followed a very similar pattern as real and financial variables did before with ULC growth increasing over the boom before declining significantly in the bust (Chart A7). The internal adjusters experienced a much more gradual trend of unit labour cost increases and decreases. External adjusters, however, first experienced significant ULC increase before experiencing a rather sharp reversal.

Real effective exchange rates and unit labour costs together are probably largely responsible for the emerging pattern of trade developments and, hence, the role of the trade channel. External adjusters experienced much weaker export growth than internal adjusters over the boom period (Chart A8). In the bust this relation reversed. Export volume growth increased strongly in the context of depreciation/valuation while it remained more muted in countries pursuing internal adjustment. As a result export/GDP ratios were roughly flat over the boom and bust cycle for internal adjusters (Chart A9). For external adjusters, this ratio first declined in the boom before rising again in the bust. This supports the claim that competitiveness changes and the trade channel were much less relevant in the case of internal adjusters. This may be the second (and perhaps even more important) reason why the growth profile during the bust is that of protracted low growth (hammock) for internal adjusters than that of deep downturn followed by a rapid recovery (V shaped) for external adjusters.

Pulling the information from the real and external side together, we should find—and indeed this is confirmed in Chart A10—that the current account balance (the counterpart to domestic savings and investment balance) deteriorates for the average of all countries in the boom before improving in the bust. This pattern is more distinct for external adjusters in the boom and bust due to stronger domestic demand growth in excess of output growth and competitiveness loss, slower export growth in the boom and a more distinct reversal of these trends in the bust. As

regards the level of the current account balance, external adjusters on average report a deficit over the full cycle which increases strongly over the boom. Internal adjusters show a very modest deterioration in the current account in the boom and a moderate improvement in the bust and overall levels remain positive throughout the cycle.

The *international financial channel* at first seems less relevant for this sample of countries where the volatility of capital flows is normally assumed to play a lesser role. Nevertheless given significant current account deficits in one group, the pattern of “other investment flows” (bank lending etc) for this group is worth looking at. The literature has identified exposure to short term foreign capital as a main vulnerability that could lead to abrupt adjustment needs in periods of confidence loss (“sudden stops”). External adjusters experienced strong inflows in the boom (up to 3% of GDP per annum) and strong outflows over the first three years of the bust (also up to almost 3% of GDP). In this particular instance it is also worthwhile looking at individual countries in this group. The clearest sign of emerging market type “sudden stop” phenomena is visible for Finland and in particular Sweden. In the latter case, inflows of other investment amounted to 12.2% of GDP in 1990 before reversing to -2.7% in 1991 and staying negative until 1993. In these cases, anecdotal evidence also points to strong exposure to foreign-currency denominated debt in the private sector but firm data is hard to come by. Overall, this information suggests that the international financial channel may have played a significant role in the choice of adjustment strategy and the abruptness of adjustment (strong fall in growth) in at least some of these countries.

What role did *fiscal policies* play? First, fiscal variables reflect the revenue impact of the boom bust cycle where revenue windfalls from capital gains related taxes boost fiscal accounts in the boom before reversing in the downturn. Consequently, the fiscal balance improves over the boom before deteriorating strongly over the bust (Chart A11). Again there is a difference in magnitude and levels in parallel with current account developments: internal adjusters experience better fiscal balances and a slower deterioration of fiscal accounts than external adjusters. The data also replicates the findings of Jaeger and Schuknecht (2004) who argue that political economy dynamics induce insufficient consolidation in the boom (the windfall is spent) and result in significant average deficits over the boom-bust cycles. In some (but not all) cases deficits reached magnitudes that required pro-cyclical consolidation to avoid macroeconomic destabilization.

The pattern of deficits and growth over boom bust cycles determine public debt developments: debt goes down modestly in the boom before rising rapidly in the bust (Chart A12). Another way of interpreting this result is that the benefits of the boom are largely “privatized” while the costs are “socialized”. In some cases, this socialization was rather direct through bank and balance sheet support, e.g., in the cases of Sweden and Finland (Jonung and Stymne, 1997; Eschenbach and

Schuknecht, 2004). In these countries, debt increased by 30 and 50% of GDP respectively.

While the Chart illustrates well the sustainability risks from boom-bust episodes for external adjusters, it perhaps underemphasizes this risk for internal adjusters. Internal adjusters' debt dynamics look healthier at first but they also become very adverse over time and continue to remain adverse for longer as the adjustment period is more prolonged. Japan is the most extreme case in point.

Some simple *statistical tests* support the evidence as regards differences in the means and patterns over boom-bust episodes across the two country groups for most of the variables discussed above. Table 3 shows the results for Wilcoxon/Mann-Whitney tests for differences in the means of the two country groups ("populations") and tests of equal Variance (F-tests) for differences in the volatility of the series. Real effective exchange rates, credit, inflation, export shares and fiscal and external balances are found to differ significantly between internal and external adjusters. As regards real GDP and export growth, differences in means and volatility are not confirmed. This suggests that the main difference between the two groups is not the level and extremeness of the business and trade cycle per se while the more accentuated downturns and upswings in the groups of external adjusters is not picked up well with this test. The equal variance test finds a significant difference in the amplitude of swings for the export share and the current account balance and perhaps even more importantly, for unit labour costs and (not quite statistically significant) real estate prices.

Table 3: Wilcoxon Signed Ranks Test for Selected Indicators, Boom-Bust Episodes in Industrialised Countries in the 1980s and 1990s

	Median (Wilcoxon/Mann-Whitney)	Eq.Variance (F-test)
	P-value	
REER	0.00 ^{***}	0.87
Real GDP growth	0.62	0.40
Real estate prices	0.84	0.14
Domestic credit growth	0.09 [*]	0.22
Inflation	0.00 ^{***}	0.77
ULC	0.89	0.06 [*]
Export growth (volumes)	0.98	0.61
Export (% of GDP)	0.002 ^{***}	0.002 ^{***}
Current account balance, % of GDP	0.00 ^{***}	0.03 ^{**}
Fiscal balance, % of GDP	0.003 ^{***}	0.29
Public debt, % of GDP	0.26	0.16
Interest rate	0.00 ^{***}	0.77

Note: ^{***}/^{**}/^{*} denotes significance at 1%, 5% and 10% significance levels. Each series has 12 observations.

In summary, these stylised facts and statistical tests confirm the hypotheses expressed above: the domestic financial, trade and fiscal channels seem to contribute to the evolution of boom-bust episodes. Countries on average depicted the expected pattern of economic and financial developments. However, external adjusters were prone to experience more pronounced upswings with stronger asset price and credit growth, more competitiveness loss and unfavourable trade developments, external vulnerability due to cumulative external imbalances, and less favourable fiscal positions. In the bust, external adjusters experienced more pronounced troughs as competitiveness loss and balance sheet problems depressed demand. But once the currency was floated/devalued, growth also recovered more swiftly and forcefully, as exports rose and imports were being replaced by domestic output. The group of internal adjusters experienced fewer and smaller macroeconomic imbalances at the end of the boom and economic and financial developments were less volatile. However, internal adjustment implied a more prolonged real and financial downturn.

While the findings clearly illustrate the intersectoral linkages that are at work, it is also important to point to systemic risks that can arise from their interplay. In Sweden, Finland and Japan, busts turned into financial crisis and both groups of countries were affected. Sweden and Finland also faced emerging market-type reversals of capital flows. They adjusted their exchange rate policy as part of the crisis resolution strategy. This strategy reinforced immediate adjustment needs in the real and financial sectors but also facilitated the emergence from the bust. Internal adjustment, pursued by Japan, did not prevent crisis but its emergence was delayed and its impact was felt in a more protracted manner.

3.2 Emerging Markets: Some Experiences in South-East Asia in the Late 1990s

When looking at boom-bust episodes from a global perspective, emerging markets are the second country group that is most interesting to analyse. In some cases, countries experienced not just one but several (more and less severe) booms and busts over recent decades. In many cases, countries started with fixed exchange rates in the boom which proved unsustainable when “good” times came to an end. In a number of countries, financial/balance of payment crises occurred at the turn from “good” to “bad” times.

Given that we have insufficient data on booms and busts in asset prices (beyond largely anecdotal references) but rather good data on incidences of financial crisis (Honahan and Klingebiel, 2000; Caprio and Klingebiel, 2002), we use this as criterion for selecting our sample countries and for determining the turning points from boom to bust under our case study approach. We focus on only a few “Asian crises” in the past decade, namely Korea, Malaysia and Thailand (Asian 3). These countries floated/devalued their currencies and could hence be considered external adjusters. In addition, we examine the experience of Hong Kong, the only

emerging economy of the region which should be considered an internal adjuster as it retained its currency board. These countries' experiences can be seen as particularly relevant from a European perspective as the level of development, policy and development strategies show some similarities with that of the CEE EU Member States.

We follow the same "procedure" as in section 3.1 when going through the different transmission channels and indicator variables. The first bust/crisis year of 1997 is considered as t_1 . Since all sample countries experienced booms and busts/crises at the same time, we can refer to "real" years and we report data for the period 1991 to 2002 (which corresponds to the twelve year period of $t-5$ to t_6 in the previous section). However, even though data for these countries are better than for many other non-industrialised countries, the analysis is hampered by scarce data availability on certain key indicators. There is virtually no data on real estate prices and booms which from anecdotal evidence have played a significant role in several Asian countries. We have no comprehensive data on private sector indebtedness and even indicators of cost competitiveness are scarce and often not fully reliable. Hence the picture is sketchier than in the previous section.

Starting with *exchange rate developments* (i.e. the CPI-based REER), the pattern of developments in our sample of Asian financial crises economies is similar to that of industrialised country boom bust episodes (Chart B1). The REER appreciated slightly in the boom preceding the bust/crisis. The bust/crisis starting in 1997 led to a drastic devaluation for the Asian 3. Thereafter, the REER appreciated again and some of the competitiveness gain was eroded. Hong Kong made the opposite experience with the real effective exchange rate initially appreciating. Thereafter, appreciation in its major trading partners led to some correction, but on the whole the REER remained much higher than before 1997.

When looking at the *real sector*, we find confirmation of a strong economic upswing in the years before the bust/crisis (Chart B2). In particular, economic expansion of the Asian 3 was very fast, averaging 5-10% annual real growth between 1991 and 1996. Hong Kong's economic growth was somewhat lower at around 5% per annum. The bust/crisis led to a dramatic fall in growth especially in the Asian 3, and mostly in the first and second bust/crisis year before recovering. After a somewhat more moderate fall, growth remained more volatile and on average somewhat lower in Hong Kong.

When looking at *domestic financial conditions*, the Asian 3 experienced a pre-bust/crisis credit boom that is more extreme though, as a pattern, very reminiscent of the experiences in some industrialised countries (Chart B3). Evidence also points to deteriorating credit quality and growing non-performing loans in the pre-bust/crisis phase which contributed to later problems. Hong Kong also experienced strong credit growth but the magnitudes were more in line with industrialised country booms. In Hong Kong, real estate prices more than tripled in real terms between 1990 and 1997 (Chan, Peng and Fan, 2005).

In the downturn, the difference between adjustment strategies becomes fully apparent. Credit growth slowed strongly but remained positive in the Asian 3 while it became strongly negative in Hong Kong. This is consistent with a strongly contractionary effect through the credit channel as a real estate price decline of 40% within two years and of almost 60% within 6 years depressed collateral values dramatically. In this regard, Hong Kong's experience is much more extreme than that of the industrialised country internal adjusters of the early 1990s.

The significant difference between the Asian countries and external and internal adjusters amongst industrialised countries is also confirmed when looking at inflation developments (Chart B4). Hong Kong's inflation during the boom remained much lower and became negative in the aftermath of the bust/crisis. The "brutal" internal adjustment process is reflected in negative price increases persisting for four years. The Asian 3 experienced a small blip in inflation after their devaluations but subsequently inflation came down to very low levels.

Arguably, the *competitiveness and trade channel* played a significant role in explaining this picture but there are some complications we need to make reference to. The Asian 3's export performance mirrors that of external adjusters amongst industrialised countries albeit growth rates were on average much higher (Chart B5). Export growth came down in particular towards the end of the boom before it recovered after the devaluation. The adjustment of relative prices and regained competitiveness of the import-competing sector helped the post-crisis recovery. Hong Kong's export growth initially declined in tandem with the Asian 3 until 1996. However, it was much lower in the subsequent three years before internal adjustment could bear fruit.⁹

Real and trade developments are also reflected in current account data (Chart B6). The Asian 3 depicted again the pattern that was already typical for the external adjusters in the West—at least up to the devaluation: current account deficits were significant and growing (to -5% of GDP in 1995/1996). During and after the bust/crisis, the current account took a turn which was much more dramatic than in our earlier sample countries. The current account balance in the Asian 3 countries peaked at a surplus of over 10% of GDP before coming down to 5% of GDP by 2002. Hong Kong's experience was more consistent with that of the internal adjusters of the previous section. The external position was on average much more favourable in the boom with only two years of significant current account deficits. The recovery of the external balance was much slower than for the Asian 3.

In these (by global standards relatively small) economies the *international financial channel* and volatility in capital flows has been argued to be much more

⁹ Hong Kong's export growth reflects to a very significant extent re-exports which were positively affected by the export boom in those countries that had devalued. Hence the domestic export picture is probably less favourable.

important than in industrialised countries when it comes to explaining booms and busts. Indeed, the Asian 3 experienced a huge swing in capital flows between boom and bust. Chart B7 shows that capital inflows of about 5% of GDP of portfolio and other investment broadly financed the current account deficit until 1996. In 1997, capital flows became negative while the current account remained near a deficit of 5%. As of 1998, the Asian 3 had reversed their current account position and were able to finance continued capital outflows. The situation of Hong Kong by contrast is unclear as no reasonable data is available for post-1996.

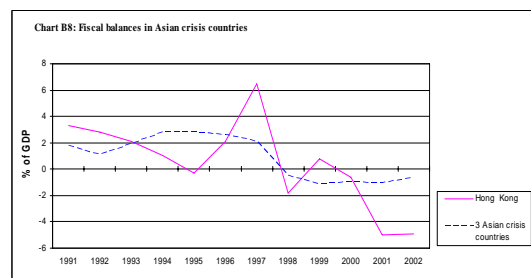
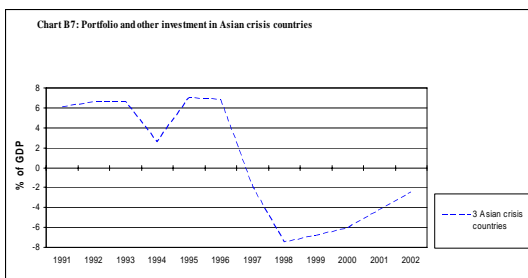
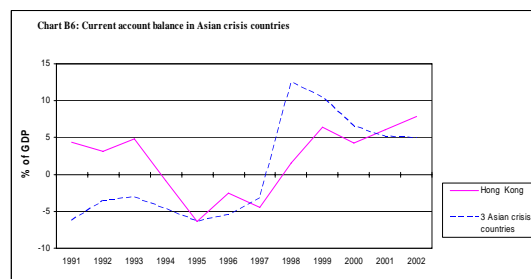
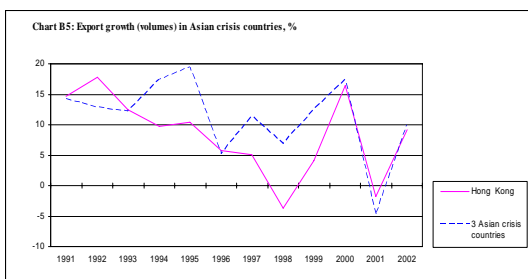
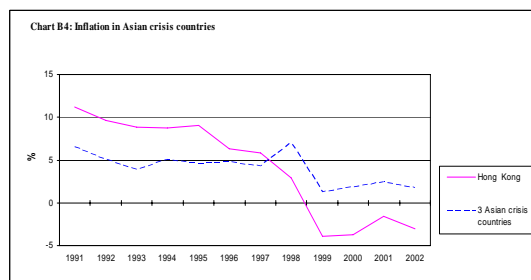
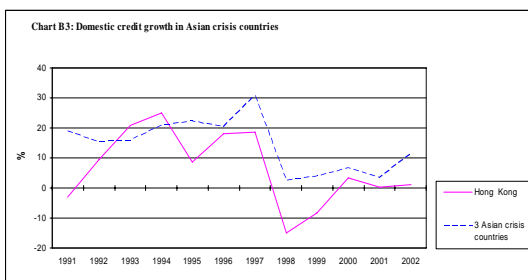
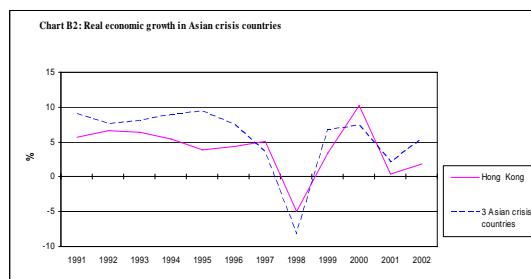
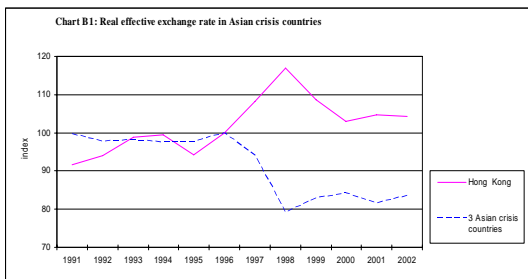
Finally, we take a quick look at *public finance* developments (Chart B8). Fiscal balances again show the same pattern as for industrialised country boom-bust episodes. But the starting point was much better for the Asian 3 (which experienced average surpluses in the boom). Fiscal balances deteriorated in all countries during the bust/crisis before they started recovering. Hong Kong's fiscal position in the boom on average was not better than for the Asian 3 but significant net assets of the government also helped prevent financial difficulties in the public sector.

In summary, the Asian (emerging market) booms and bust/crisis episodes in many ways show similar patterns as industrialised countries although data availability at times hampers the analysis.¹⁰ The same transmission channels seem to be at work even though in particular the international financial channel is likely to be much more important for emerging economies than for advanced countries. Reversal of capital flows can easily tip countries from a "simple" bust into a full-fledged crisis when there are significant external liabilities—even when public debt is small. This again points to systemic risks that the interplay of the various transmission channels creates. External adjustment facilitated the emergence from bust/crisis.

The only country in South-East Asia that did not adjust its currency in the context of the Asian crisis was Hong Kong. Its internal adjustment strategy led to a somewhat more extreme adjustment experience as that of the internal adjusters in industrialised countries. At the end of the boom, external and fiscal positions were very favourable so that a full-fledged crisis could be avoided. The internal adjustment strategy implied deep relative price adjustment that manifested itself in several years of strong consumer and asset price deflation and low and volatile growth. However, this promoted balance sheet adjustment and the re-establishment of competitiveness.

¹⁰ This finding is also confirmed when conducting the earlier Wilcoxon/Mann-Whitney and variance tests on extended groups where Hong Kong is added to the group of internal adjusters and Korea, Malaysia and Thailand to the external adjusters.

Chart 2: Experiences in South-East Asia in the Late 1990s



3.3 Two Case Studies from Recent Years: the Netherlands and Portugal

From the perspective of the euro area and with a view to identify challenges for the CEE EU Member States, two more recent country experiences are worthwhile discussing in more detail: the Netherlands and Portugal. In both countries, one could see 2000 as the last year of an asset-price boom in conjunction with a period of rapid economic expansion and 2001 as the beginning of a period of low growth and other economic and financial developments that are akin to the busts of the early 1990s.¹¹

Following the same approach as in the previous section (and assuming the same transmission channels and hypotheses), we look at stylised facts in these two countries and, when useful, compare them with euro area developments. Starting with exchange rate developments, both countries adopted the euro at the beginning of 1999. This means by definition that they chose the internal adjustment strategy for any eventual adjustment need. The data on real effective exchange rate developments illustrates that the two countries experienced similar REER developments over the boom as the internal adjusters in the previous section (Chart C1). Until 2000, the Netherlands and (to a lesser extent) Portugal experienced a depreciation of their CPI-based REER. Between 2000 and 2004 and with the end of the boom, the REER appreciated by 10% in both countries (which was somewhat more than for the euro area average).

Starting with the *real economy*, the boom bust pattern is clearly visible in real economic growth figures as reported in Chart C2. The two countries experienced a strong boom between about 1995 and 2000: average growth reached nearly 4% of GDP per annum. Since then growth first slowed down and briefly reached negative territory. Similar to the 1980s/90s episodes, this pattern reflects a consumption and, even more importantly, investment boom in the two countries in the late 1990s which reversed in 2001.

When looking at the *domestic financial environment*, the earlier period was accompanied by a very strong stock and real estate price cum credit boom in the Netherlands. The inflation-adjusted stock market index, for example, increased five-fold between the early 1990s and 2000. It is not clear whether Portugal experienced a significant real estate price boom. Anecdotal evidence points to such an experience while the evidence from indicators is more mixed which may also reflect measurement problems. However, the stock market boomed strongly in the

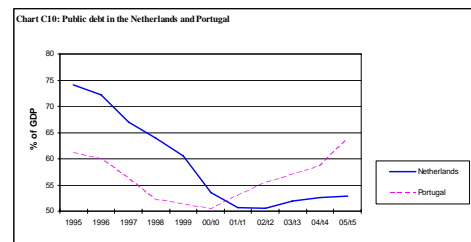
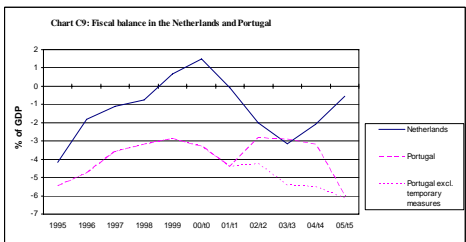
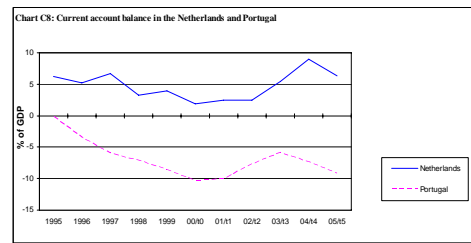
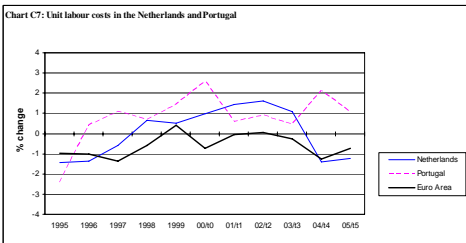
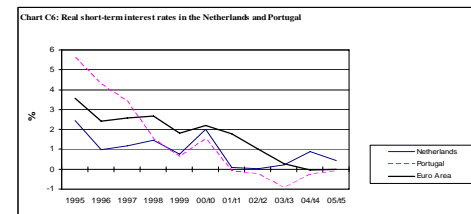
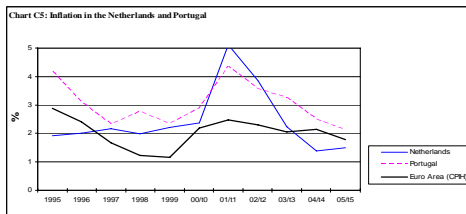
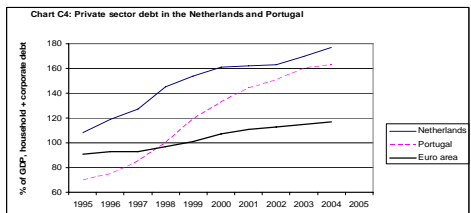
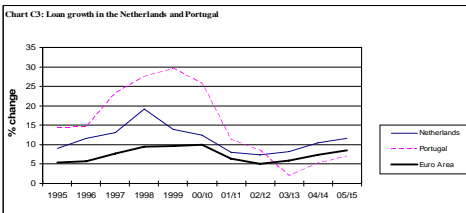
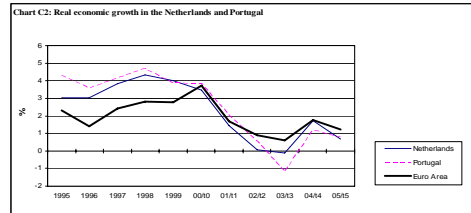
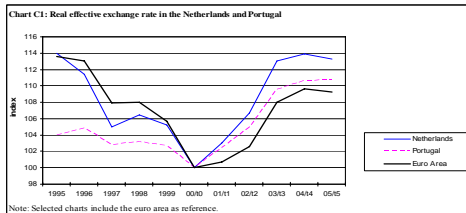
¹¹ While in the case of the Netherlands, this is based on the Jaeger/Schuknecht methodology; in the case of Portugal asset price indicators were not available. The identification hence follows from the parallel experience of the stock market decline that started in 2000 in all industrialized countries and patterns of economic and financial developments discussed below.

late 1990s. Until 2001 loans in Portugal grew considerably more rapidly than in the Netherlands, although this can be partly explained by catching-up processes (Chart C3). The stock market boom came to an end in both countries in 2000 and indices fell by about 50% within two years while the Netherlands real estate boom also faded out. In parallel, loan developments show a strong deceleration as of 2001.

The credit boom resulted in a dramatic deterioration of private sector balance sheets between 1995 and the early 2000s (for which there is good data available for euro area countries since 1995). This is illustrated in Chart C4. Dutch and Portuguese household and corporate debt increased very strongly over the 1995-2004 period to levels that are amongst the highest in industrialised countries and far above the euro area average.

Price developments in the two countries also exhibit a broadly similar pattern as previous boom-bust episodes (Chart C5). Inflation picked up especially towards the end of the boom when it markedly exceeded the euro area average. Subsequently, inflation came down to levels relatively close to the euro area average of about 2%. *Despite these differences as compared to the euro area, inflation developments in the Netherlands and Portugal have still been more comparable to the experience of internal adjusters in the late 1980s and early 1990s.*

Chart 3: Two Case Studies from Recent Years: the Netherlands and Portugal



The impact of monetary policy during the boom period was mildly expansionary in the Netherlands, where real short-term interest rates tended to fall until 1999, and strongly expansionary in Portugal, with a fall in real short-term interest rates by nearly five percentage points between 1995 and 1999 (Chart C6). This should be seen in the context of Portugal's nominal convergence process to the euro area. During the initial years of the bust, real short-term interest rates continued to fall in both Portugal and the Netherlands, thus playing a supportive role in the early phase of the internal adjustment process. Only from 2002 respectively 2003 onwards the trend decline reversed, in line with the decline in inflation. Overall, however, real interest rates remained rather low in the Netherlands and Portugal.

Turning to *competitiveness and the trade channel*, unit labour costs grew rapidly during the boom (Chart C7). The depreciation of the REER may have compensated to some extent for the adverse effects until 2000, but thereafter it worked in the same direction. The reversal of the earlier competitiveness loss relative to the euro area started in 2004 in the Netherlands while unit labour cost growth remains high in Portugal. In light of these figures it comes as no surprise that both countries' export performance also suffered in the course of the boom before it started to pick up again in 2004.

Current account developments of the two countries show a marked deterioration (Chart C8). But the Netherlands started from a significant surplus and the deterioration was less severe. As a result the current account remained in surplus at the height of the boom. This is very much in line with the pattern for internal adjusters displayed in earlier boom bust episodes. Portugal reported a strong deterioration from balance in 1995 to a deficit of more than 10% of GDP in 2000. This partly reversed until 2003 before deteriorating again thereafter. While the initial deterioration was roughly equally due to an increase in consumption and investment, developments in recent years feature a strong decline in investment that was partly "eaten up" by a further decline in savings and an increase in consumption.

As regards *international financial vulnerability*, the magnitude of external imbalances for Portugal is reflected in rather dramatic capital flows. In fact, Portugal financed most of its current account imbalance via "other (foreign) investment" which reflects mainly Spanish banks financing the Portuguese credit and demand boom.

In both countries, *fiscal balances* improved during the boom but this improvement was much stronger in the Netherlands than in Portugal (Chart C9). Portuguese public finances in fact already started to deteriorate in 2000. Revenue windfalls had largely been transformed into rising public spending in this country so that the fiscal deterioration in the bust started from an unfavourable level. By contrast, the bust-related worsening of the Dutch fiscal position started from a relatively favourable level.

Strategies also differed significantly in the downturn. Portugal undertook mostly one-off measures that stabilized headline deficits while masking a continuous further deterioration of the underlying balance. Chart C9, therefore, represents deficits both including and excluding temporary measures. The elimination of one-off measures brought the deficit to about 6% of GDP in 2005. The Netherlands took drastic adjustment measures of about 4% of GDP and the deficit breached the 3% threshold in 2003 before improving again in the two subsequent years.

Public debt developments reflect deficit trends (C10). The Netherlands used the good times for significant debt reduction and the recent increase has not brought the debt ratio above the 60% threshold again. Portuguese debt declined much less in the boom and then started rising rapidly again.

In summary, both Portugal and the Netherlands experienced an asset price, credit and real economy boom followed by a marked and sustained slowdown. Inflation in the boom was above the euro area average but differences remained rather contained and real interest rates were low both during the boom period and the subsequent downturn. However, private sector balance sheets and cost competitiveness declined in both countries during the boom and by 2005 had not yet improved (in particular in Portugal) so as to expect a rapid recovery via the trade and credit channel. There are also major differences between the two countries: the Netherlands was in a relatively favourable fiscal and external position at the end of the boom and determined action prevented major fiscal deterioration in the bust. The Portuguese “party” of the 1990s left it with very significant imbalances where it appears that most of them have yet to be tackled.

4. The Central and Eastern European EU Member States

Finally, we look at the recent experiences and economic situation of the eight Central and Eastern European (CEE) EU Member States.

¹² The CEE countries can be broadly grouped into two separate sub-groups, first the three Baltic countries Estonia, Latvia and Lithuania plus Bulgaria (CEE4) and second, the Czech Republic, Hungary, Poland, Romania and Slovakia (CEE5). ¹³

¹² Two other new EU Member States, Cyprus and Malta are not covered in this paper given that asset price and financial market developments as well as real economic growth in these two countries have been rather subdued in recent years compared to the CEE countries. This makes a stocktaking exercise in view of possible boom and bust experiences due to the interaction of real and financial sector variables less meaningful.

¹³ Slovenia has not been included in either of these two groups. With regard to asset price and economic growth development it would fit into the CEE5 group of countries, but it follows an internal adjustment strategy. In fact Slovenia has joined the euro area on 1 January 2007.

For the purposes of this paper there are two key differences between these groups. The CEE4 are a group of (very) small open economies that decided early on in the transformation process to (largely) forego active monetary and exchange rate policy and established currency boards instead. They can thus be considered as internal adjusters. The CEE5 countries are small- to medium-size open economies which, despite significant country-specific differences in their monetary and exchange-rate policy, tend to make more active use of monetary and exchange-rate policy instruments than the CEE4. However, ERM II membership and ultimately euro adoption implies for these countries that they will also have to ultimately move to an internal adjustment strategy (Backé et al. 2004, Schadler et al. 2005) although the timing of this transition process will be again country-specific.

In line with the analytical framework used for the other country groups, we start our stock-taking exercise of the variables underlying the different transmission channels by first looking at *real effective exchange rate* developments in the CEE4 and the CEE5. Chart D1 shows a trend appreciation of the REER in both country groups. This is not surprising, given that these countries currently experience a real convergence process towards the euro area (and EU) average. However, the rate of appreciation was stronger over the last few years in the CEE5 countries, whereas the appreciation trend flattened in the CEE4.

Chart 4: The Central and Eastern European EU Member States

Chart D1: Real effective exchange rate in the New member states, CPI deflated (2000=100)

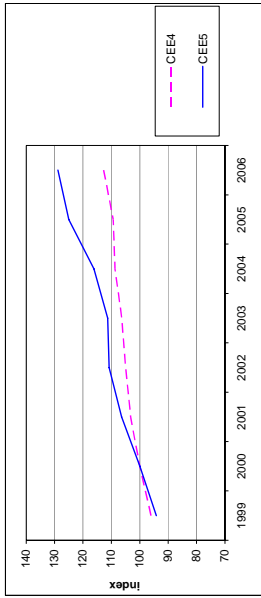


Chart D2: Real Economic growth in the New Member States

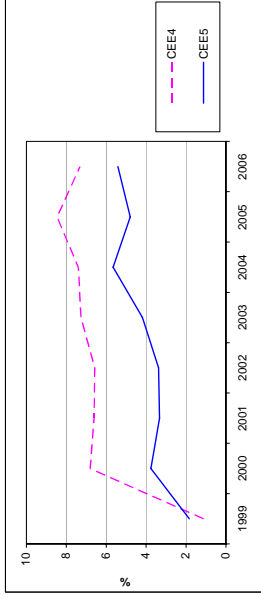


Chart D3: Domestic credit growth in the New Member States



Chart D4: Private sector debt (% of GDP) in the New Member States

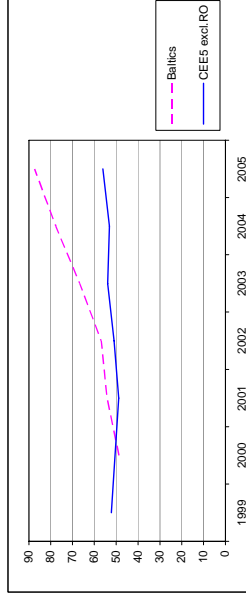


Chart D5: Share of foreign currency loans in total loans to private sector, %

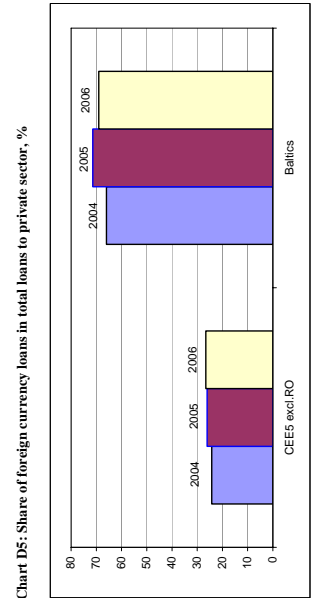
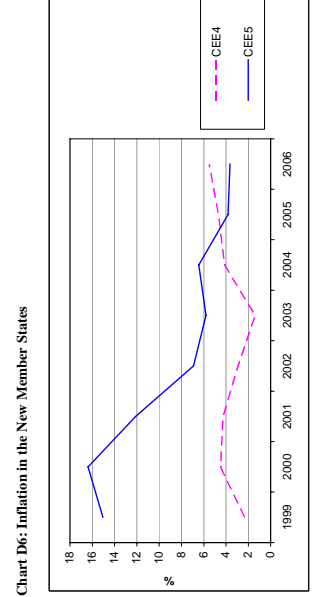


Chart D6: Inflation in the New Member States



Note: BG data missing, CZ data in 2005 missing, RO available (2001-2003), LV available (2002-2004)

Chart D7: Unit labour costs in the New Member States

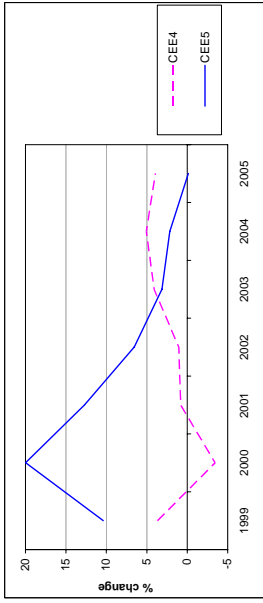


Chart D8: Export growth (volumes) in the New Member States, %

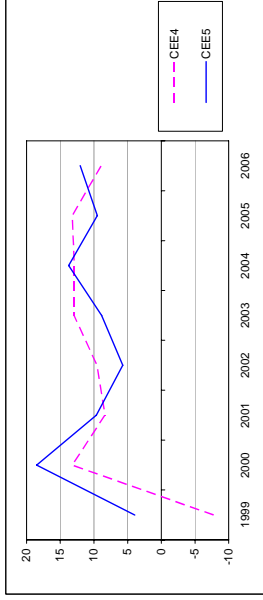


Chart D9: Current account balance in the New Member States

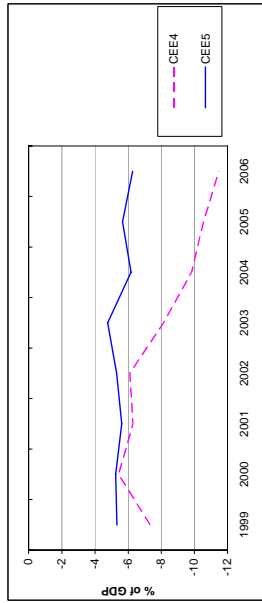


Chart D10: Portfolio and other investment in the New Member States

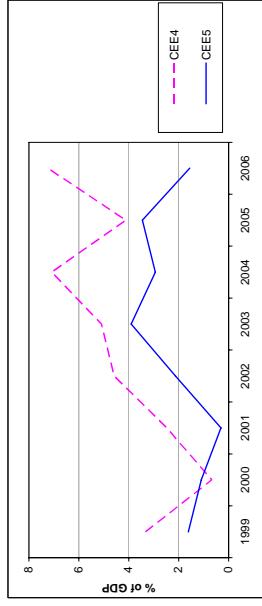


Chart D11: Fiscal balance in the New Member States

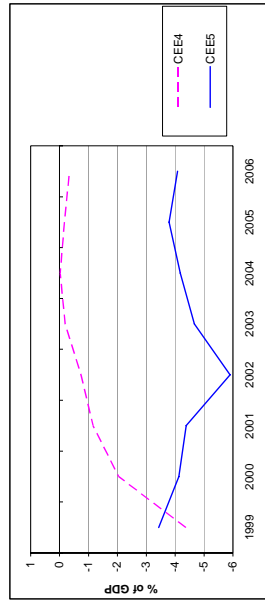
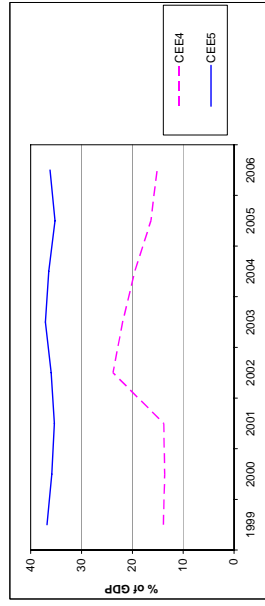


Chart D12: Public debt in the New Member States



Note: BG has data only as of 2002, therefore the jump in the series

Real *economic growth* in the CEE5 countries was in recent years far below the growth rates of the CEE4. In fact, it was rather similar to growth rates experienced by industrialised countries during boom periods (Chart D2).¹⁴ By contrast, the rate of economic expansion in the CEE4 countries is also very rapid. In fact, out of the country groups discussed in this paper only the Asian emerging economies experienced similarly strong rates of economic expansion during their boom period until 1995. This similarity can also be observed for consumption and investment developments.

Analyses of the *domestic financial environment* in the CEE countries are unfortunately plagued with severe data problems.¹⁵ However, the CEE countries have seen very buoyant credit growth in recent years. This applies in particular to the CEE4 (over 50% in 2005) but also to some CEE5 countries (see Chart D3).¹⁶ As a result, private sector debt-to-GDP ratios are beginning to increase, especially in the Baltic countries. Although debt is still relatively low compared to the euro area average (see Chart D4 and Chart C4 for the euro area average) there are indications that the net financial position of non-financial corporations in the CEE countries is less advantageous than in the euro area (due to a less favourable asset position). Moreover, stock markets in the CEE countries have mostly experienced very fast growth in the recent past and – although the data situation in this area is particularly weak – there is patchy evidence of strong house price increases in many CEE countries.

The very dynamic growth of credit in recent years is likely to have been influenced by the strong trend decline in real short-term interest rates observed in the CEE in general and particularly in the CEE4. In fact, real short-term interest rates in the CEE4 have recently fallen to levels below those seen in the groups of external and internal adjusters in the late 1980s. Furthermore, the share of foreign currency loans in per cent of total loans has reached very high levels, in particular in the Baltic countries where long-established currency boards and the associated perception of low currency risks make foreign currency loans with a lower interest rate particularly attractive (see Chart D5)¹⁷. However, despite the at times considerable exchange rate volatility in the CEE5 countries foreign currency loans also play a sizeable role in this group. This applies not only to euro-denominated loans but also to loans denominated Japanese Yen and Swiss Francs.

¹⁴ On growth prospects in the new central European EU Member States see e.g. Arratibel et al. (2007), European Commission (2004) or Wagner and Hlouskova (2002).

¹⁵ For a detailed overview of credit developments in the CEE countries see Backé and Zumer (2005) or European Central Bank (2006a).

¹⁶ Cottarelli et al. (2003) do not see the recent evolution of bank credit in Central and Eastern Europe and the Balkans as troublesome. However, the results of their empirical work are based on developments only up to 2003.

¹⁷ Comparable recent data for Bulgaria and Romania is not available.

Price developments in the CEE4 and the CEE5 since 1999 are characterised by a strong disinflation period in the CEE5 (strongly influenced by initially very high inflation in Romania) and relatively benign inflation between 1999 and 2003 in the CEE4 (see Chart D6). During the last three years, however, inflation in the CEE4 has picked up to levels above 5%, well above the CEE5 and euro area average.

Turning to the *trade and international competitiveness channel*, unit labour cost increases in the CEE5 have experienced a trend decline for a number of years largely due to very high gains in productivity (see Chart D7). However, although productivity increases in the CEE4 countries were also quite significant, ULC increase quite strongly in these countries since 2000. This is largely due to increasing wage growth in recent years, which in turn is related to emerging labour market bottlenecks in a very high growth environment.

Export growth was buoyant in both groups of CEE Member States since 2000 although the CEE4 recently experienced a slight decline in export volume growth (see Chart D8). Turning to the current account, however, both country groups show persistent deficits during the entire observation period (see Chart D9). Moreover, current account imbalances in the CEE4 countries worsened considerably since 2002, reaching almost 12% of GDP in 2006. Given that the CEE8 are catching-up economies, current account deficits are not surprising, also in view of the large investment needs of rapidly transforming economies. However, whereas the gap in investment growth between the CEE4 and the CEE5 averages has recently closed, the current account gap has widened significantly, suggesting that at least part of the CEE4's external imbalance originates from consumption rather than investment. In fact, these are the highest, persistent external imbalances experienced by any of the sample countries in this study.

Looking at the main sources of *international finance*¹⁸ used to cover the external imbalances in the CEE countries, some similarities between the sub-groups emerge. FDI inflows are significant in the entire region, although they tended to decrease somewhat in the recent past. This can largely be explained by the trend decline in privatisations in these countries. By contrast, portfolio and other investment increased until 2003 in both country groups. Since then inflows into the CEE5 remained more or less constant respectively decreased in 2006. By contrast, this relatively volatile forms of international capital inflows reached almost 8% of GDP in the CEE4 in 2004 and again in 2006 (see Chart D10).

Finally, turning to *fiscal developments* since 1999, public accounts in the CEE4 recovered steadily from the aftermath of the Russian crisis and remained at or close to balance since 2003 (see Chart D11).¹⁹ However, despite very strong growth in recent years the CEE4 do not record fiscal surpluses. By contrast, fiscal balances in

¹⁸ On international capital flows and the new Member States see e.g. Begg et al. (2003).

¹⁹ For a useful overview of fiscal developments in most CEE countries see the ECB's Convergence Reports in 2006 (ECB 2006b and ECB 2006c).

the CEE5 countries gradually deteriorated until 2002 and only the last few years saw some moderate improvement. As a result, public debt in the CEE5 remained close to 40%, still well below the EU average but well above the public debt ratio afforded by most emerging markets (Afonso, Nickel and Rother, 2005) (see Chart D12).

Summing up, the CEE countries are currently experiencing a period of strong credit and asset price growth in conjunction with rapid economic expansion. On the basis of the stylised facts discussion above the emerging “boom” in these countries appears more pronounced and advanced in the CEE4 while the CEE5 countries seem to be at an earlier stage.

Looking at the other sample groups discussed in this paper, the external adjusters tended to experience more pronounced booms with more significant losses of external competitiveness and more pronounced external imbalances. By contrast, the internal adjusters among the CEE group of countries, i.e. the CEE4, appear to be closer to a boom than the external adjusters, i.e. the CEE5. Great caution is needed, however, when interpreting this finding. First, although the probability estimates above suggest that a boom in the CEE countries – if not already in place – is very likely to happen, the current situation does not allow a clear prediction of what such a possible boom will look like and how it will end. In the run up to the peak of the boom it can not be excluded for example, that the financial and economic expansion in the CEE5 countries will gain further momentum and catch up with the current situation in the CEE4. In addition – and even more importantly – boom periods do not need to turn into a bust but may as well lead to a more benign ‘soft landing’.

5. Conclusions and Policy Implications

This study has derived stylised facts and some preliminary statistical analysis on a number of boom – bust episodes. It has looked at different country groups (industrialised countries, emerging markets and the new CEE EU Member States) and at different adjustment strategies in the face of busts (external adjustment with real effective exchange rate devaluation versus internal adjustment without such devaluation).

The findings support the claim that real and financial variables interact in boom-bust episodes where asset price cycles and their impact on private balance sheets constitute an important driving force. The study also finds that boom bust patterns are rather similar across industrialised and emerging countries. The former group is perhaps less vulnerable but not immune to systemic risk with reversing capital flows and busts turning into financial crises.

Most importantly, countries’ different (exchange rate) adjustment experiences are correlated with the extent of macroeconomic imbalances and the degree of balance sheet vulnerability. Together with relatively loose fiscal policies, this

stoked asset price and consumer price inflation and domestic demand. At the same time it reinforced competitiveness losses in the boom which – when fortunes reversed – exacerbated the bust and the resulting adjustment needs. In those cases where the external adjustment was chosen and the exchange rate was devalued, this shift in policy first reinforced balance sheet problems in the private sector but then precipitated a rapid recovery. From this we conclude:

- External adjusters tend to experience more pronounced booms with more overheating of demand, increases in prices and credit, loss of competitiveness and deterioration of (private sector, external and public) balance sheets than reported for internal adjusters.
- In busts, external adjusters tend to experience deep downturns and rapid recoveries as imbalances are initially more severe but, subsequently, also unwind more quickly. Internal adjusters tend to face less deep but more protracted downturns (and even deflation) as imbalances unwind more slowly and adjustment via the trade and credit channels takes more time.

What policy messages arise from these experiences? The study seems to confirm many “orthodox” messages about sectoral and systemic risks:

- The more dramatic demand and financial excesses, competitiveness loss, and fiscal and external imbalances in the course of the boom the more likely it seems that a country would be found in the group of external adjusters in the bust.
- Internal adjustment appears to be more prevalent when external and fiscal imbalances are small, and when credit growth, inflation and competitiveness loss is contained during the boom
- Monetary policies and wage developments should not contribute to disequilibria in prices, demand or balance sheets. Fiscal policies should not stoke the boom. Low public debt would leave room for “socializing” part of the losses in the bust if needed. Fiscal policies have been more prudent on average in the group of internal adjusters but a number of country experiences have shown that sound headline figures in the boom are no panacea.

Stylised facts for the CEE EU Member States suggest that a few of them appear to be in the early stages of a boom while there are some others that appear to be further along. Although clear and definite conclusions can not be drawn for the CEE EU Member States, not least due to the serious data problems for these countries that complicate inter alia a detailed examination of asset price developments and balance-sheet vulnerabilities, the experiences of boom-bust scenarios in other countries may serve as an “early warning” and may raise awareness of related policy challenges in the CEE countries. On the whole, they also confirm that the Maastricht convergence criteria provide much important information to assess the sustainability of economic developments in EU Member States that aim at adopting the euro. However, balance sheet vulnerability in the private sector may be an additional factor to monitor. Whereas it is not part of the

formal convergence assessment as specified in the EU Treaty, the country experiences reviewed in this paper show that such imbalances may affect the indicators observed directly in the convergence process – although with a considerable lag and in a non-linear manner – and may provide early warnings on emerging boom – bust cycles.

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Annex Table: Data and Sources

Real effective exchange rate (REER): IMF/WEO database, Global Insight/World Market Monitor database and ECB.

Real economy/demand channel

Real economic growth: OECD/OEO database and IMF/WEO database.

Real private consumption: OECD/OEO database and IMF/WEO database.

Real private investment: OECD/OEO and IMF/WEO database, European Commission/AMECO database and Eurostat.

Total employment: OECD/OEO database and IMF/WEO database and European Commission/AMECO database.

Domestic financial/credit channel

Asset price/real estate price indices: BIS, Hong Kong Monetary Authority

Credit: IMF/IFS database.

Loans: ECB.

Private debt: ECB

Real short-term interest: OECD/OEO.

Inflation: OECD/OEO database and IMF/WEO database.

Trade/competitiveness channel

Real unit labour costs: OECD/OEO database and IMF/WEO database, and Eurostat.

Export volumes: IMF/WEO database.

Import volumes: IMF/WEO database.

Exports: IMF/WEO database.

Imports: IMF/WEO database.

International financial channel

Current account balance: OECD/OEO database and IMF/WEO database.

Foreign Direct Investment: IMF/WEO database.

Portfolio: IMF/WEO database.

Other investment: IMF/WEO database.

Fiscal channel

Fiscal balance (adjusted for one-off UMTS receipts): OECD/OEO database and IMF/WEO database.

Public debt: OECD/OEO database and IMF/WEO database and European Commission/AMECO database.